CATS NEWSLETTER

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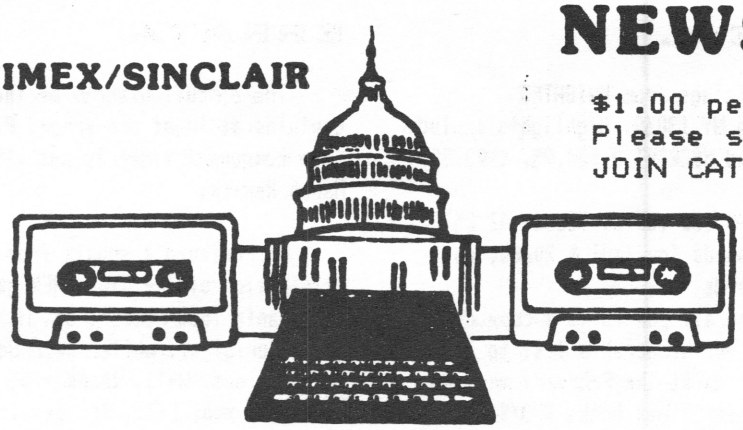

March 1986
Vol. 3, No. 11

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Meeting Date Change: The next meeting of CATS will be held on Saturday, March 15. That's the third Saturday.

From the Editor

Welcome to the CATS tax issue! I hope that you'll find some of the programs in this issue to be helpful. If you don't want to use the programs, perhaps you'll be able to adopt some of the techniques used into your own programs.

We need articles. There are more than thirty MODEMs in the club: surely some of you have discovered how to get the darn things working. Since I'm one of the thirty, you can download (upload?) your completed articles to me via MODEM. An article has been promised on driving an IBM 370 from a TS2068. Articles could cover local bulletin boards, real use of the FIDO net concept, current events on the big boards (Compuserve, etc.), patches to drive 80 column printers, how to transfer files between computers, etc..

For the rest of you: you're not going to let those telecommunicators take over, are you? We'll need more general programming articles for both the 1000 and the 2068. Especially reviews!

Bulletin Boards

Bulletin Boards, or BBS, are an inexpensive way to get involved in telecommunications. Ed Braun phoned over a selection of local numbers without comment. There's a story here! Let the rest of us know what you find as you explore. Columbia: 596-3569, Annandale: 560-0979, Gaithersburg: 428-7931, Great Falls: 759-5049, Rockville: 949-8848, Potomac: 424-5817, Arlington:360-3393. Have fun!

Last Meeting

The hardware sessions are maturing: attendance is steady at around 20, but the scope of activity has broadened from the single project focus of the first meetings to a variety of jobs, large and small. Tom Bent is still in the thick of things, but other folks are taking responsibility for helping their neighbors, and the buzz of activity is hard to describe.

The "main" meeting was infected by the tail end of the hardware meeting. Folks had gotten so involved in their projects, they didn't bother moving in for the more formal part. It was disappointing for the formal presenters, but I think it says good things about the health of the club. We covered misc. questions in the first half, and a demo of machine to machine transfer of files via MODEM.

Next Meeting

There is a possibility that the principal force behind Zebra Systems may come down from New York. Zebra has brought us such things as the OS64 cartridge board, the $24.95 version of MSCRIPT, and the 2068 version of the Koala Pad graphics tablet. It will be interesting to see where Zebra is going in the future.

As mentioned above, the next meeting will be held on the third Saturday of March, at the usual meeting place. This is not a permanent change - we'll be back to every second Saturday for the rest of the year.

New Products, Etc.

We've recieved 2068 and QL catalogs from KNIGHTED COMPUTERS, 707 Highland St., Fulton NY 13069. Highlights include Omnicalc 2 for the 2068 @ $19.50 and MSCRIPT @ $24.95. (+$3.00 p&h)

BUDGET ROBOTICS & COMPUTING, PO Box 18616, Tucson AZ 85731 sends word of buffered expansion boards for ZX81 & 2068s, as well as a line of robot control boards.

ZEBRA SYSTEMS should be sending all you folks a copy of their catalog - a motion to supply our membership list to Zebra for that purpose passed by acclamation at the February meeting. Notable in their flyer is an offer for Timex books @ 3/$12.00. Titles include Inside the TS2000, TS2068 Intermediate/ Advanced Guide, & Master's Vu-Calc& Vu-File.(+$3.00 p&h)

SUNSET ELECTRONICS, 2254 Taraval St., San Francisco CA 94116 is offering Westridge Modems, uncased, but with power supply, @ $29.95. 415-665-8330.

If you're more adventureus, check with GLEN CLIFFORD or ED GREY. They're offering a "Hacker's Special." 4 modem boards, 2 untested, 2 known bad, with one set of cables and info on troubleshooting. $10.00 to start, with price to rise as time goes on (???). Glen Clifford, 13910 Halldale Ave., Gardena CA 90249: (213) 516-6648.

Jules Gesang sends word that a sample database is available from GENIE: Dial (800) 638-8369; when you get through, type HHH (to set baud rate to 300); then VJM11999,GENIE. You get 15 minutes to explore what this database can offer.

GTE TELENET is offering an off-hours long distance service to major cities: $25.00 flat rate for unlimited off-hours time. If you are getting into the bulletin board habit, this might keep your phone bill from looking like a ransom note. Phone PC Persuit at 800 835-3001 or 703 689-2987 with your MODEM for a description of how it works. If you want to talk to a human, try 800 368-4215

If you are as confused as everyone else about how to use MTERM II, send $8.00 to: BARRY CARTER, PO Box 614, Warren, MI 48090. In return, you'll get a copy of his booklet on using the advanced features of MTERM II.

John Burns, of the Atlanta TSUG, mentions a second enhancement for MTERM II: LOADER IV enhances MTERM, adding 20 extra auto-dial numbers, and allowing simple transmission of text files and machine code. Send $7.95 to KURT CASBY, 25 Battle Creek Court, St. Paul, MN 55119.

AUTOMATED OFFICE PRODUCTS, (301) 927-9101 (Riverdale), sent us a flyer announcing a printer ribbon cartridge reloading service. I haven't checked their prices yet, but let me know if you'd be interested in doing a club ribbon collection.

DEADLINE DATES

Meeting	Newsletter
	March 15
March 22	April 12
April 19	May 10
May 17	

ERRATA

The circuit diagram of the TS 2068 (January CATS n/l) contains at least one error. Pin B-4 on the external connector (non-component side) is not +15V DC. It is +5V DC. Thanks to March Renick.

We recieved a squalk from the Atlanta TSUG, correcting my attribution of the STAR TREK game to the LIST group. Apparently, an Atlanta TSUG member, Dr. Mahaffey translated it from the PDP-11 original, while their Editor, Bret Lanius, wrote the instructions. Well, thank you, Dr. Mahaffey, thank you, Bret; and thank you, LIST, for getting it on your library tape.

SAVE THOSE RIBBON CARTRIDGES!

I mentioned Automated Office Products in my New Products Etc. column. I've just been talking with Greyson O'Kane, and found that they will refill your old cartridge, beating the best price I've heard of for new Prowriter cartridges. So - bring in your old cartridges to the March meeting, and save! They will do single cartridges, but they're giving us a price ($2.50 each), and a block of cartridges would be less trouble for them. If you don't have a Prowriter, bring in your cartridges anyway; they'll refill any cartridge (prices may vary - he said the Prowriter cartridge was a piece of cake). Grayson may be at the March meeting.

CONTRIBUTORS

Caroline & Murray Barasch
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OFFICIALDOM

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Editor	Mark Fisher
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TAPED

COMPOUND INTEREST FOR 2K TS1000:

This handy 2K program for computing compound interest features an interesting screen display and the option of changing your input values to compare possible investment strategies. If you keep a 16K memory pack hooked up to your machine, begin by first lowering RAMTOP to 2K by direct command: POKE 16389,72. NEW. Now type in the program, and SAVE. Your tape may now be used on either an unexpanded 2K TS1000 or a large memory configuration.

NOTE: If INKEY$ is any key other than (I),(P),or (T), the program retains the old values of these variables and returns the user to the menu. This arrangement eliminates a redundant error-catching routine.

HINT: When asked for "term in days", you may input an expression like "5*365" saving a lot of figuring in your head.

Phil Doughty 55 Vassar Ave.
Providence, RI 02906

```
  10 LET X$="C O M P O U N D  I
N T E R E S T"
  20 GOSUB 360
  30 GOSUB 260
  40 LET A=INT  (100*P*(1+I/100)*
*(T/365))/100
  50 CLS
  60 GOSUB 360
  70 PRINT "$";P;", INVESTED AT
";I;"%/% FOR"
  80 PRINT T;" DAYS, OR"
  90 PRINT TAB 14;INT ((T/30.416
66)*100+.5)/100;" MONTHS, OR"
 100 PRINT TAB 14;INT ((T/365)*1
00+.5)/100;" YEARS YIELDS:"
 110 PRINT "$";A-P;" INTEREST"
 120 PRINT "FOR A TOTAL OF $";A
 130 PRINT
 140 PRINT "CHANGES? PRESS LETTE
R OF CHOICE."
 150 PRINT
 160 PRINT "(I)NTEREST RATE"
 170 PRINT "(P)RINCIPAL"
 180 PRINT "(T)ERM IN DAYS"
 190 PRINT
 200 IF INKEY$="" THEN GOTO 200
 210 PRINT "ENTER (";INKEY$;")"
 220 IF INKEY$="I" THEN INPUT I
 230 IF INKEY$="P" THEN INPUT P
 240 IF INKEY$="T" THEN INPUT T
 250 GOTO 40
 260 PRINT "INTEREST RATE: ";
 270 INPUT I
 280 PRINT I;"%/%"
 290 PRINT "PRINCIPAL: ";
 300 INPUT P
 310 PRINT P
 320 PRINT "TERM IN DAYS: ";
 330 INPUT T
 340 PRINT T
 350 RETURN
 360 PRINT
 370 PRINT X$
 380 FOR X=1 TO 8
 390 PRINT "■■■■";
 400 NEXT X
 410 PRINT
 420 RETURN
```

at times doesn't wait for Input(T)

Tax Code for 1985

Here is an update of the tax code. It is designed for those who use the 1040 and itemize deductions.

If you have the version of this code for 1984 then you need only change lines 9,38,40,42,50,100, 162,330, 480,550-570,684,850,and 900.

The program is menu driven and has the advantage that you may change any entry and recalculate the tax. Menu item 5 causes the input variable list to be printed out. This list is needed to make input changes. Results can be saved on tape for later revision.

R. A. Schrack

```
  8 REM ************************
  9 REM   R.A. Schrack - 1985
 10 REM   Tax Preparation code
 11 REM ************************
 12 DIM M$(36,23)
 14 DIM V(36)
 16 DIM R(4)
 18 DIM S(4)
 20 LET R(1)=14
 22 LET R(2)=14
 24 LET R(3)=16
 26 LET R(4)=17
 30 LET S(1)=273
 32 LET S(2)=273
 34 LET S(3)=313
 36 LET S(4)=341
 37 GO TO 100
 38 PRINT AT 11,0;"ENTER 3540 I
F MARRIED FILING JOINTLY OR QUAL
IFYING WIDOW."
 39 PRINT
 40 PRINT "ENTER 2390 IF SINGLE
 OR HEAD OF HOUSEHOLD."
 41 PRINT
 42 PRINT "ENTER 1770 IF MARRIE
D FILING SEPARATE RETURN."
 44 RETURN
 50 CLS : PRINT AT 3,5;"Federal
 Income Tax 1985"
 52 PRINT
 54 PRINT "Enter number of choi
ce from menu"
 56 PRINT
 58 PRINT "1. Fresh start"
 60 PRINT "2. Correction run"
 62 PRINT "3. Input data listin
g"
 64 PRINT "4. Results listing"
 66 PRINT "5. Input data index
listing"
 68 PRINT "6. Save program on t
ape"
 70 PRINT
 72 PRINT "Do not use RUN to re
start the    program- it will er
ase all your data!  Use GO TO 50
 instead."
 74 PRINT "You will need the in
put data    index listing before
 you make a correction run."
 76 INPUT z
 78 CLS
 80 IF z=1 THEN GO TO 12
 82 IF z=3 THEN GO TO 850
 84 IF z=4 THEN GO TO 680
 86 IF z=5 THEN GO TO 1000
 88 IF z=6 THEN GO TO 9000
 90 PRINT AT 3,5;"Give index of
 value to be  changed."
 92 INPUT k: IF k<=0 OR k>36 TH
EN GO TO 92
 93 PRINT : PRINT "Give new val
ue of ";m$(k);" = ";
 94 INPUT v(k)
 95 PRINT v(k)
 96 PRINT : PRINT "give an R to
 recalculate tax or ENTER for an
other correction."
 97 PAUSE 0: CLS : IF INKEY$="R
" THEN GO TO 250
 98 CLS : GO TO 90
 100 LET M$(1)="6F NUMBER OF EXE
MPTIONS"
 102 LET M$(2)="7  SALARIES,WAGE
S,TIPS"
 104 LET M$(3)="8  INTEREST INCO
ME"
 106 LET M$(4)="9c  ADJUSTED DIV
IDENDS"
 108 LET M$(5)="10 REFUND STATE
INC.TAX"
 110 LET M$(6)="12 BUSINESS INCO
ME (C)"
 112 LET M$(7)="13 CAPITAL GAINS
 (D)"
 114 LET M$(8)="14 CAP. GAINS DI
ST."
 116 LET M$(9)="16 TAXABLE PENSI
ONS"
 118 LET M$(10)="18 RENTS,ROYALT
IES (E)"
 120 LET M$(11)="19 FARM INCOME
(F)"
 122 LET M$(12)="22 OTHER INCOME
"
 124 LET M$(13)="25 EMP.BUS. EXP
.(2106)"
 126 LET M$(14)="26 IRA DEDUCTIO
N"
 128 LET M$(15)="30 MARRIED CPLE
 DED.(W)"
 130 LET M$(16)="A1 MEDICINES AN
D DRUGS"
 132 LET M$(17)="A2a DOC. AND IN
S. BILLS"
 134 LET M$(18)="A2b MED. TRANSP
ORTATION"
 136 LET M$(19)="A2c OTHER MED.
EXP."
 138 LET M$(20)="A6 STATE INCOME
 TAXES"
 140 LET M$(21)="A7 REAL ESTATE
TAXES"
 142 LET M$(22)="A8 EXTRA SALES
TAX "
 144 LET M$(23)="A11 MORTGAGE IN
TEREST"
 146 LET M$(24)="A12 CREDIT CARD
 INT."
 148 LET M$(25)="A15 CASH CONTRI
BUTIONS"
 150 LET M$(26)="A16 OTHER CONTR
IB."
 152 LET M$(27)="A19 THEFT,CASUA
LTY LOSS"
 154 LET M$(28)="A20 UNION,PROF.
 DUES"
 156 LET M$(29)="A22 OTHER MISC.
 DED."
 158 LET M$(30)="A25 DEDUCTIONS
OFFSET"
 160 LET M$(31)="39 ADDITIONAL T
AXES"
 162 LET M$(32)="45+49 TAX CREDI
TS"
 164 LET M$(33)="56 OTHER TAXES"
 166 LET M$(34)="57 TAXES WITHEL
D"
 168 LET M$(35)="58 TAX PREPAYME
NTS"
 170 LET M$(36)="63 OTHER PAYMEN
TS"
```

Contd. on next pg.

```
 200 FOR I=1 TO 36
 210 PRINT AT 9,1;"GIVE ";M$(I)
 215 IF I=30 THEN GO SUB 38
 220 INPUT V(I)
 230 CLS
 240 NEXT I
 250 LET TI=0
 260 FOR I=2 TO 12
 270 LET TI=TI+V(I)
 280 NEXT I
 290 LET TA=V(13)+V(14)+V(15)
 300 LET AGI=TI-TA
 330 LET MY=V(16)+V(17)+V(18)+V(
19)
 340 LET MD=MY-.05*AGI
 350 IF MD<=0 THEN LET MD=0
 360 IF AGI>=40000 THEN GO TO 40
0
 370 PRINT " YOUR ADJUSTED GROSS
 INCOME IS    $";AGI;" FIND YOUR
 SALES TAX    FROM TABLE ON PAGE
 36 AND ENTER IT.      "
 380 INPUT ST
 390 GO TO 410
 400 LET ST=(1+INT ((AGI-40000)/
5000))*R(V(1))+S(V(1))
 410 LET TD=0
 420 FOR I=20 TO 29
 430 LET TD=TD+V(I)
 440 NEXT I
 450 LET TD=TD+ST+MD
 470 LET SD=TD-V(30)
 480 LET TAXI=AGI-SD-1040*V(1)
 490 IF TAXI>50000 THEN GO TO 54
0
 500 CLS
 510 PRINT " YOUR TAXABLE INCOME
 IS $";TAXI;"    USE TAX TABLES
ON PAGES 28-33. ENTER TAX."
 520 INPUT TAX
 530 GO TO 590
 540 REM CALC. FOR MARRIED FILIN
G JOINTLY
 550 LET TAX=10171.6
 552 LET MIN=47670
 554 LET TAXR=.38
 556 IF TAXI<62450 THEN GO TO 58
0
 558 LET TAX=15788
 560 LET MIN=62450
 562 LET TAXR=.42
 564 IF TAXI<89090 THEN GO TO 58
0
 566 LET TAX=26976.8
 568 LET MIN=89090
 570 LET TAXR=.45
 580 LET TAX=TAX+TAXR*(TAXI-MIN)
 582 LET TAX=(INT (100*TAX))/100
 590 LET TTAX=TAX+V(31)-V(32)+V(
33)
 600 LET TAXDUE=TTAX-V(34)-V(35)
-V(36)
 610 CLS
 620 PRINT AT 9,1;" SUMMARY 1983
 FED. INCOME TAX"
 622 PRINT AT 11,6;"INPUT DATA"
 625 PAUSE 200
 630 FOR I=1 TO 36
 640 PRINT M$(I);TAB 24;V(I)
 660 NEXT I
 663 PRINT
 666 PRINT "     END OF INPUT DA
TA , Wait 5 seconds."
 670 PAUSE 600
 680 CLS
 682 PRINT "SUMMARY OF RESULTS"
 684 PRINT "1985 FEDERAL INCOME
TAX"
 686 PRINT
 690 PRINT "23 TOTAL INCOME";TAB
 24;TI
 700 PRINT "31 TOTAL ADJUSTMENTS
";TAB 24;TA
 710 PRINT "32 ADJ. GROSS INCOME
";TAB 24;AGI
 720 PRINT "A5 MEDICAL DEDUCTION
";TAB 24;MD
 730 PRINT "A8a SALES TAX";TAB 2
4;ST
 740 PRINT "A24 TOTAL DEDUCTIONS
";TAB 24;TD
 750 PRINT "A26 SUMMARY OF DEDUC
T.";TAB 24;SD
 760 PRINT "37 TAXABLE INCOME";T
AB 24;TAXI
 770 PRINT "38 TAX ON INCOME";TA
B 24;TAX
 780 PRINT "56 TOTAL TAX";TAB 24
;TTAX
 782 IF taxdue>0 THEN GO TO 790
 784 LET op=-taxdue
 786 PRINT "65 Overpaid!";TAB 24
;op
 788 GO TO 800
 790 PRINT "68 TAX DUE";TAB 24;T
AXDUE
 800 PRINT
 810 PRINT "IF PRINTOUT OF OUTPU
T IS DESIRED PRESS P, OTHERWISE
PRESS M FOR MENU ."
 820 PAUSE 0: IF INKEY$<>"P" THE
N GO TO 50
 824 COPY
 826 GO TO 50
 850 LPRINT "INPUT FOR 1985 FED.
 INCOME TAX"
 860 LPRINT
 870 FOR I=1 TO 36
 880 LPRINT M$(I);TAB 25;V(I)
 890 NEXT I
 891 LPRINT
 892 LPRINT
 893 LPRINT
 894 LPRINT
 900 GO TO 50
1000 FOR I=1 TO 36
1002 LPRINT I;"  ";M$(I)
1004 NEXT I
1006 GO TO 50
9000 SAVE "TAX85" LINE 9002
9002 BEEP 1,1: BEEP .5,0: BEEP .
5,2
9004 GO TO 50
```

Variable List

```
1   6F NUMBER OF EXEMPTIONS
2   7  SALARIES,WAGES,TIPS
3   8  INTEREST INCOME
4   9c  ADJUSTED DIVIDENDS
5   10 REFUND STATE INC.TAX
6   12 BUSINESS INCOME (C)
7   13 CAPITAL GAINS (D)
8   14 CAP. GAINS DIST.
9   16 TAXABLE PENSIONS
10   18 RENTS,ROYALTIES (E)
11   19 FARM INCOME (F)
12   22 OTHER INCOME
13   25 EMP.BUS. EXP.(2106)
14   26 IRA DEDUCTION
15   30 MARRIED CPLE DED.(W)
16   A1 MEDICINES AND DRUGS
17   A2a DOC. AND INS. BILLS
18   A2b MED. TRANSPORTATION
19   A2c OTHER MED. EXP.
20   A6 STATE INCOME TAXES
21   A7 REAL ESTATE TAXES
22   A8 EXTRA SALES TAX
23   A11 MORTGAGE INTEREST
24   A12 CREDIT CARD INT.
25   A15 CASH CONTRIBUTIONS
26   A16 OTHER CONTRIB.
27   A19 THEFT,CASUALTY LOSS
28   A20 UNION,PROF. DUES
29   A22 OTHER MISC. DED.
30   A25 DEDUCTIONS OFFSET
31   39 ADDITIONAL TAXES
32   45+49 TAX CREDITS
33   56 OTHER TAXES
34   57 TAXES WITHELD
35   58 TAX PREPAYMENTS
36   63 OTHER PAYMENTS
```

IR5 1040 REVISITED

by

Richard Parker

REFERENCES: CATS Jan-Feb 85 and Oct 84.

1985

TAX PREPARATION

INSTRUCTIONS

The MENU is the main driver of this program. In case of trouble enter GO TO MENU. Entering STOP in response to a MENU prompt will halt the program. Then enter GO TO RESTART.

The program contains formulas for the 1040 Tax Form and Forms A, E, SE, and W. It also has VA tax formulas. Changes for MD are shown later. The program shows the line numbers on the forms, the data entries and calculations fit.

Only MENU operations 1, 5, or 7 may be chosen as initial responses. Operations 2, 3, 4, or 6 can follow the previous choice of 1. Operation 5 displays to either screen or printer and shows all the tax forms that have been setup with data. Operation 2 must be used with care as the initial query asks a very crucial question. A yes answer clears all the files and should be so answered the first time through a new tax computation, and answered no at all following times. Operation 3 shows only the current Form as selected in Operation 1. Operation 8 is similar for printer output. Operation 7 saves both the tax data and operating program. Any changes to tax data in Forms A, E, etc. will be reflected in the 1040 Form T.

The tax tables contain three items for each tax bracket; the bracket income limit, the tax rate, and the tax accumulated from lower brackets.

The adjustments shown in Form W are setup to minimize the large income with credit for IRA and rollovers, and spliting of Form E equally between both incomes. Form A is all assigned to the large income. This can be changed in line 9180.

Following are the changes for the MD tax.

Line No	Conversion
545	Change V to M
1020 & 1210	VA MD
1360 & 2160	V$ M$
4250 & 5110	VA MD
5130	DATA 0,.02,0,1000,.03,20, 2000,.04,50,3000,.05,90
5140	DATA 273,14,273,14,313,16, 341,17,341,17,345,17
6020	Change V to M
6220, 6250 & 6350	600 800
9150 & 9181	VA MD
9200	VA MD
	V$ M$
	V& M&
	VA 13 to MD 14
	VA 15 MD 16
	VA 16 MD 20
	VA 17 MD 21
	T(51)+T(52) to INT(((T(51)+T(52))*150)/100

```
  1 REM IR51040 1985 R W Parker
    IR52 © 1984 M. Fisher
BASED ON J. R. Flannagan PROGRAM
  2 REM
  3 REM
  4 PRINT #1;AT 0,0;"  HIT ANY
 KEY TO CONTINUE      ": PAUSE 4
E4
  5 LET M=0: LET NEW=1: LET YOR
N=700: LET SETUP=200: LET MENU=1
000: LET REST=800: LET RESTART=5
: DIM F$(7): DIM N$(5,64): DIM X
(15): DIM P(15): DIM I(15): DIM
S(7): DIM D(7): DIM B(4): DIM M(
4): DIM V(4): DIM E(6): DIM F(6)
: POKE 23658,8
  7 RESTORE : GO SUB 9000: GO S
UB 5000
 10 GO TO MENU
 20 REM ********READ SUB********
 30 FOR J=1 TO LEN R$
 40 IF R$(J)=";" THEN GO TO 80
 45 IF R$(J)="#" THEN GO TO 800
 46 IF R$(J)="&" THEN GO TO 800
0
 50 NEXT J
 60 LET P$=R$( TO J-1)
 70 LET R$=R$(J+1 TO )
 80 RETURN
 90 REM ********PRINT SUB********
100 LET POS=PR-LEN STR$ INT TR
105 IF LPRINT>0 THEN GO TO 117
110 PRINT TAB POS;P$(LEN P$);TR
112 GO TO 120
117 LPRINT TAB POS;P$(LEN P$);T
R
118 PRINT TAB POS;P$(LEN P$);TR
120 POKE 23692,255
140 RETURN
150 REM ********INPUT**********
160 INPUT TR
170 GO SUB PRI
180 RETURN
190 REM ******SETUP**********
200 LET READ=20: LET POS=0
210 LET PRI=90: LET PR=28
220 DIM T(63): DIM A(7)
230 LET IN=160: LET T(1)=1
235 CLS : RESTORE
240 REM ********MAIN LOOP********
260 FOR I=S(F) TO D(F)
270 GO SUB READ
275 IF LPRINT>0 THEN GO TO 287
280 PRINT P$( TO LEN P$-1);
282 GO TO 290
287 LPRINT P$( TO LEN P$-1);
288 PRINT P$( TO LEN P$-1);
290 IF P$(LEN P$)="F" THEN GO T
O 400
300 GO SUB IN
310 LET T(I)=TR
320 GO TO 450
400 GO SUB READ
410 LET T(I)=VAL P$
420 LET TR=T(I)
430 LET P$="$"
440 GO SUB PRI
445 IF I=18 THEN PRINT : PRINT
#1;AT 0,0;"HIT ANY KEY TO CONTIN
UE": PAUSE 4E4: CLS : PRINT AT 2
,0
450 NEXT I
460 RETURN
500 REM **** FORM SELECTION ***
*
510 IF R$(J-1)="A" THEN GO TO 5
60
520 IF R$(J-1)="E" THEN GO TO 5
90
530 IF R$(J-1)="S" THEN GO TO 6
20
540 IF R$(J-1)="W" THEN GO TO 6
50
545 IF R$(J-1)="V" THEN GO TO 6
80
550 GO TO 50
560 LET P$=R$( TO J-2): IF A(2)
=2 THEN GO TO 580
570 LET T(38)=0: LET T(50)=0
580 GO TO 70
590 LET P$=R$( TO J-2): IF A(3)
=3 THEN GO TO 610
600 LET T(34)=0
610 GO TO 70
620 LET P$=R$( TO J-2): IF A(4)
=4 THEN GO TO 640
630 LET T(63)=0
640 GO TO 70
650 LET P$=R$( TO J-2): IF A(5)
=5 THEN GO TO 670
660 LET T(60)=0: GO TO 70
670 LET T(8)=T(60): GO TO 70
680 LET P$=R$( TO J-2): IF A(6)
=6 THEN GO TO 690
685 LET T(53)=0: LET T(54)=0
690 GO TO 70
700 REM ***** GET Y OR N ******
710 PRINT AT 21,0
720 LET q$=""
730 POKE 23658,0: INPUT v$
740 POKE 23658,8
750 IF v$=INKEY$ THEN GO TO 750
760 LET q$=q$+v$
770 IF q$="y" OR q$="n" THEN RE
TURN
780 PRINT #1;AT 0,0;"KEY ""y""
OR ""n""
790 GO TO 720
800 REM ******** REST *********
810 PRINT #1;AT 0,0;"HIT ANY KE
Y TO RETURN TO MENU": PAUSE 4E4:
 CLS : GO TO MENU
1000 REM ********* MENU *********
1005 BEEP .5,10
1010 PRINT AT 0,0;"  1985 1040 T
AX RETURN PROGRAM",TAB 14;"MENU"
,,,"FIRST SELECT OPERATION (1) ,T
HEN SELECT OPERATION (2-4 or 6)"
1020 PRINT "SELECT FORMS A,E,SE,
T,W,VA   1"
1030 PRINT "ENTER NEW DATA";TAB
29;"2"
1040 PRINT "REVIEW OLD DATA";TAB
 29;"3"
1050 PRINT "CHANGE DATA";TAB 29;
"4"
1060 PRINT "DISPLAY RESULTS";TAB
 29;"5"
1070 PRINT "PRINT RESULTS";TAB 2
9;"6"
1080 PRINT "SAVE DATA";TAB 29;"7
"
1090 PRINT AT 20,0;TAB 6;"ENTER
MENU SELECTION";V
1100 IF M<1 OR M>7 THEN GO TO 10
00
1110 GO TO (1200+200*(M-1))
1200 REM *** FORM SELECTION ****
1210 CLS : PRINT " DO YOU WANT T
O WORK ON FORMS   A, E, SE, W o
r VA (y OR n)": GO SUB YORN
1220 IF q$="y" THEN GO TO 1260
1230 CLS : PRINT " DO YOU WANT T
O WORK ON MAIN    FORM 1040? (y
 OR n)": GO SUB YORN
1240 IF q$="n" THEN CLS : LET F=
7: GO TO MENU
1250 LET A(1)=1: LET R$=T$( TO L
EN T$): LET F=1: CLS : GO TO MEN
U
1260 CLS : INPUT "INPUT FORM DES
IRED A E S W or V" I$
1270 FOR F=2 TO 6
1280 IF F$(F)=I$ THEN GO TO 1300
+10*F
1290 NEXT F
1300 PRINT AT 21,0;" SELECT FORM
 FOR WORK          INPUT A, E
 S W or V": INPUT I$
1310 GO TO 1270
1320 LET R$=A$( TO LEN A$): LET
F=2: GO TO 1365
1330 LET R$=E$( TO LEN E$): LET
F=3: GO TO 1365
1340 LET R$=S$( TO LEN S$): LET
F=4: GO TO 1365
1350 LET R$=W$( TO LEN W$): LET
F=5: GO TO 1365
1360 LET R$=V$( TO LEN V$): LET
F=6
1365 CLS : LET A(F)=F: PRINT AT
5,5;" YOU HAVE SELECTED FORM ";
FLASH 1;F$(F); FLASH 0: PRINT AT
 1,0
1370 GO TO REST
1400 REM ******* NEW DATA *******
1410 LET NEW=1: LET IN=160: LET
LPRINT=0
1420 CLS : PRINT " THIS MENU OPT
ION CAN ERASE ALL  FILES.  DO YO
U WANT TO DO THIS? (y OR n)"
1430 GO SUB YORN
1435 CLS : PRINT AT 0,0
1440 IF q$="n" THEN GO SUB 240:
GO TO REST
1445 PRINT 0,0
1450 LET NEW=0: GO SUB 190: GO T
O REST
1600 REM ******* REVIEW ********
1610 LET LPRINT=0: LET NEW=0
1620 CLS : PRINT AT 0,0: LET R$=
N$(F)+R$
1630 LET IN=1700
1640 GO SUB 240: GO TO REST
1700 LET TR=T(I)
1710 GO SUB PRI
1720 RETURN
1800 REM ******* REVISE ********
1805 LET NEW=1: LET LPRINT=0
1810 LET IN=1900
1820 CLS : PRINT "WANT TO REVISE
 FIGURES? (y OR n)"
1825 GO SUB YORN
1830 IF q$="n" THEN GO TO MENU
1840 CLS : PRINT AT 0,0: LET R$=
N$(F)+R$
1850 GO SUB 240: GO TO REST
1900 LET TR=T(I)
1910 GO SUB PRI
1920 PRINT " OK? (y OR n)"
1930 GO SUB YORN
1935 IF I-S(F)<18 THEN PRINT AT
I-S(F)+3,0
1936 IF I-S(F)=18 THEN CLS
1937 IF I-S(F)>=18 THEN PRINT AT
 I-S(F)-15,0
1940 IF q$="y" THEN RETURN
1950 PRINT AT 21,0;"ENTER NEW VA
LUE": IF I-S(F)<18 THEN PRINT AT
 I-S(F)+2,24: GO SUB 150
1951 IF I-S(F)>=18 THEN PRINT AT
 I-S(F)-16,24: GO SUB 150
1955 IF I-S(F)<18 THEN PRINT AT
21,0;"                ": PRINT A
T I-S(F)+3,0
1956 IF I-S(F)>=18 THEN PRINT AT
 21,0;"                ": PRINT
AT I-S(F)-15,0
1960 RETURN
2000 REM ******* DISPLAY ********
2010 LET NEW=0: LET IN=1700: LET
 REST=2060: LET LPRINT=0
2020 CLS : PRINT "DO YOU WANT A
PRINT COPY? (y OR n)"
2030 GO SUB YORN
2040 IF q$="y" THEN LET LPRINT=1
2050 FOR F=1 TO 6
2060 IF A(F)=0 THEN GO TO 2090
2070 GO TO 2100+10*F
2080 PRINT #1;AT 0,0;"HIT ANY KE
Y TO CONTINUE": PAUSE 4E4
2090 NEXT F
2100 LET REST=800: GO TO REST
2110 LET R$=T$( TO LEN T$): GO T
O 1520
2120 LET R$=A$( TO LEN A$): GO T
O 1520
2130 LET R$=E$( TO LEN E$): GO T
O 1520
2140 LET R$=S$( TO LEN S$): GO T
O 1520
2150 LET R$=W$( TO LEN W$): GO T
O 1520
2160 LET R$=V$( TO LEN V$): GO T
O 1520
2200 REM ******* LPRINT ********
2210 LET LPRINT=1
2220 CLS : LET R$=N$(F)+R$
2230 GO TO 1630
2400 REM ******* SAVE **********
2410 SAVE "IR52" LINE 1000
2420 CLS : GO TO MENU
4200 LET N$(1)="          1040 TAX C
ALCULATIONS       "
4210 LET N$(2)="          ITEMIZED D
EDUCTIONS         "
4220 LET N$(3)="  RENT, ROYALTY
, ETC INCOME      "
4230 LET N$(4)="          SELF EMPLO
YED               SOCIAL SECURI
TY TAX            "
4240 LET N$(5)="INCOME SPLIT FOR
 WORK DEDUCTION             AND ST
ATE TAX           "
4250 LET N$(6)="          VA STA
TE TAX            "
4260 RETURN
4999 REM **** LOAD TABLES *******
5000 FOR K=1 TO 15
5010 READ X(K): READ P(K): READ
I(K): NEXT K
5015 FOR K=1 TO 7
5020 READ S(K): READ D(K): READ
F$(K): NEXT K
5025 FOR K=1 TO 4
5030 READ B(K): READ M(K): READ
V(K): NEXT K
5035 FOR K=1 TO 6
5040 READ E(K): READ F(K): NEXT
K
```

Contd. on next pg.

```
5050 REM MARRIED TAXPAYERS JOINT
       RETURNS TAX TABLE
5060 DATA 0,0,0,3540,.11,0,5720,
.12,239.8
5070 DATA 7910,.14,502.6,12390,.
16,1129.8,16650,.18,1811.4
5080 DATA 21020,.22,2598.2,25600,.
25,3505.6,31120,.28,4985.8
5090 DATA 36630,.33,6528.4,47670
,.35,10171.6,62450,.42,15758
5100 DATA 89060,.45,26078.8,1135
60,.49,38123.3,169020,.5,65703.3
5105 REM     FORM DIMENSIONS
             IN T-ARRAY
5110 DATA 1,24,"T",35,50,"A",25,
34,"E",61,63,"SE",66,68,"U",61,6
5,"VA",0,0,"?"
5120 REM     STATE TAX TABLES
5130 DATA 0,.02,0,3000,.03,60,50
00,.05,120,12000,.0575,470
5140 DATA 263,13,277,14,336,17,3
56,18,376,19,402,20
5150 RETURN
6000 REM ### TABLE SELECTION ###
6010 IF R$(J-1)="T" THEN GO TO 6
050
6020 IF R$(J-1)="V" THEN GO TO 6
200
6030 IF R$(J-1)="A" THEN GO TO 6
300
6035 IF R$(J-1)="G" THEN GO TO 6
400
6040 PRINT "ERROR IN TABLE SELEC
TION (6030)"
6050 GO TO 70
6060 REM FEDERAL TAX CALCULATION
6090 FOR K=15 TO 1 STEP -1
6100 IF T(18)>=X(K) THEN GO TO 6
130
6110 NEXT K
6120 LET K=1
6130 LET T(19)=INT (((T(18)-X(K)
)*P(K)+I(K))*100)/100
6140 LET P$=R$( TO J-2): GO TO 7
0
6200 REM  STATE TAX CALCULATION
6210 FOR K=4 TO 1 STEP -1
6220 IF (T(60)+T(59)-600+T(22))>
=B(K) THEN GO TO 6250
6230 NEXT K
6240 LET K=1
6250 LET T(51)=INT (((T(60)+T(59
)-B(K)-600+T(22))*M(K)+V(K))*100
)/100
6260 LET P$=R$( TO J-2): GO TO 7
0
6310 FOR K=4 TO 1 STEP -1
6320 IF (T(57)-(T(1)-1)*600+T(3)
-T(7)-T(22))>=B(K) THEN GO TO 63
50
6330 NEXT K
6340 LET K=1
6350 LET T(52)=INT (((T(57)-(T(1
)-1)*600+T(3)-T(7)-T(22)-B(K))*M
(K)+V(K))*100)/100
6360 LET P$=R$( TO J-2): GO TO 7
0
6400 LET VGS=INT (((INT ((T(10)-
40001)/5000)+1)*F(T(1))+E(T(1)+.
05))*100)/100
6410 IF VGS<=0 THEN GO TO 6440
6420 LET T(41)=VGS
6430 LET P$=R$( TO J-2): GO TO 7
0
6440 LET P$=R$( TO J-2): GO TO 6
0
6990 REM ****** TAX FORMS ******
6991 REM     FEDERAL TAX FORM 1040
9000 LET T$="NO OF EXEMPTIONS(L6
f) ;WAGES (L7)$;INTEREST INCOME(
L8)$;ST TX REFUND(L10)$;PENSION,
ROLLOVERS(L17)$;"
9001 REM    SUPLEMENTAL INCOME
9010 LET E$="RENTAL INCOME(L3a,E
)$;RENT COMMISSION(L7,E)$;RENT I
NSURANCE(L8,E)$;RENT INTEREST(L1
0,E)$;RENT REPAIRS(L12,E)$;"
9011 REM
9020 LET E$=E$+"RENT TAXES(L14,E
)$;RENTAL EXPENSE(L18,E)F;T(26)+
T(27)+T(28)+T(29)+T(30);RENT DEP
RECIAT(L19,E)$;RENTAL COSTS(L20,
E)F;T(31)+T(32);NET RENT INCOME(
L21)F;T(26)-T(33);"
9021 REM     FORM 1040 CONT.
9030 LET T$=T$+"TOTAL INCOME+C+E
(L23)FE#T(2)+T(3)+T(4)+T(5)+T(34
)+T(51);IRA DEDUCTION(L26)$;MARR
IAGE DED.(L30)FU#T(60);TOTAL ADJ
USTMENT(L31)F;T(7)+T(8);ADJ GROS
S INC.(L32)F;T(6)-T(9);"
9031 REM    ITEMIZED DEDUCTIONS
9040 LET A$="DR DENT INS$(L2a,A)
$;MED. XPORTATION(L2b,A)$;OTHER
MEDICAL(L2c,A)$;TOTAL MEDICAL(L3
,A)F;T(35)+T(36)+T(37);"
9041 REM
9050 LET A$=A$+"ST/LOC. INC. TAX
(L6,A)$;REAL ESTATE TAX(L7,A)$;G
ENERAL SALES(L8,A)FG#T(41);OTHER
 TAXES(L9,A)$;"
9051 REM
9060 LET A$=A$+"TOTAL TAXES(L10,
A)F;T(39)+T(40)+T(41)+T(42);MORT
 INTEREST(L11,A)$;FINANCE CHARGE
S(L12,A)$;TOTAL INTEREST(L14,A)F
;T(44)+T(45);"
9061 REM
9070 LET A$=A$+"CONTRIBUTIONS(L1
8,A)$;CASUALTY, THEFT(L19,A)$;TO
TAL MISCELLEN.(L23,A)$;ITEMIZED
(W/O MED)F;T(43)+T(46)+T(47)+T(4
8)+T(49);"
9071 REM     1040 CONT.
9080 LET T$=T$+"MEDICAL MIN.(L4,
A)F;INT ((100#T(10)#.05)/100;MEDI
CAL DED.(L5,A)FA#(T(38)-T(11))#(
(T(38)-T(11))>0);TOTAL DEDUCT.(L
24,A)F;T(12)+T(50);"
9081 REM
9090 LET T$=T$+"FIL. STAT. 2,5(L
25,A)F;3540;NET DEDUCT.(L26,A:L3
4a)F;(T(13)-T(14))#((T(13)-T(14)
)>0);NET INCOME(L35)=F;T(10)-T(1
5);EXEMPTIONS(L36)F;T(1)#1040;TA
XIBLE INCOME(L37)F;T(16)-T(17);"
9091 REM
9140 LET T$=T$+"TAX(L38)FT#T(19)
;TAX CREDITS(L49)$;TOTAL WAGE+SS
 TAX(L58)F;INT ((T(19)-T(20))#10
0)/100+T(63);"
9141 REM
9150 LET T$=T$+"SMALL INCOME VA
TAX DED$;FED TAX WITHELD(L57)$;"
"-""=REFUND:""+""=PAYF;INT ((T(2
1)-T(23))#100)/100"
9151 REM  WORKING MARRIED COUPLE
9160 LET U$="LARGER INCOME(L1a,U
)$;ADJUSTMENT(L5a,U)F;INT ((T(55
)+.5#(T(34)+T(61)))#100)/100;SMA
LLER INCOME(L1b,U)F;T(2)-T(56);A
DJUSTMENT(L5b,U)F;INT ((T(58)+(T
(34)+T(61))#.5)#100)/100;DEDUCTI
ON(L8,U)F;INT ((T(59)#8.1)#100)/
100;"
9161 REM    VA TAX FORM
9200 LET V$="SMALL INCOME TAX(VA
,13)FV#T(61);LARGE INCOME TAX(VA
,13)FA#T(62);VA TAX(16/17)F;T(61
)+T(62);VA TAX WITHHELD(VA,15)F;
T(39);FED+VA PAYMENT SUM
          + YOU PAY, - YOU GETF;T(24
)+T(53)-T(54);"
9201 REM    SELF EMPLOYED FORM
9210 LET S$="SE INCOME(L32,C:L2,
SE)$;SE TAX INCOME(L13,SE)F;((T(
61)-39600+T(2))(0)#T(61)+((39600
-T(2)-T(61)(0)#((39600-T(2))>0
)#(39600-T(2)));SE SS TAX(L14,SE
)F;INT ((T(62)-39600(0)#T(62)#11
.8+(39600-T(62)(0)#39600#11.8)/1
00;"
9900 GO TO 4200
```

```
    1985 1040 TAX RETURN PROGRAM
                MENU

FIRST SELECT OPERATION (1),THEN
SELECT OPERATION (2-4 or 6)

SELECT FORMS A,E,SE,T,U,VA      1
ENTER NEW DATA                  2
REVIEW OLD DATA                 3
CHANGE DATA                     4
DISPLAY RESULTS                 5
PRINT RESULTS                   6
SAVE DATA                       7

        ENTER MENU SELECTION
U
```

1040 TAX CALCULATIONS

NO OF EXEMPTIONS(L6f)	3
WAGES (L7)	$60000
INTEREST INCOME(L8)	$200
ST TX REFUND(L10)	$400
PENSION,ROLLOVERS(L17)	$0
TOTAL INCOME+C+E(L23)	$66043
IRA DEDUCTION(L26)	$2000
MARRIAGE DED.(L30)	$1772.15
TOTAL ADJUSTMENT(L31)	$3772.15
ADJ GROSS INC.(L32)	$62270.85
MEDICAL MIN.(L4,A)	$3113.54
MEDICAL DED.(L5,A)	$0
TOTAL DEDUCT.(L24,A)	$10071
FIL. STAT. 2,5(L25,A)	$3540
NET DEDUCT.(L26,A:L34a)	$6531
NET INCOME(L35)=	$55739.85
EXEMPTIONS(L36)	$3120
TAXIBLE INCOME(L37)	$52619.85
TAX(L38)	$12052.54
TAX CREDITS(L49)	$0
TOTAL WAGE+SS TAX(L58)	$12052.54
SMALL INCOME VA TAX DED	$60.8
FED TAX WITHELD(L57)	$12000
"-"=REFUND:"+"=PAY	$52.54

ITEMIZED DEDUCTIONS

DR.DENT.INS$(L2a,A)	$750
MED. XPORTATION(L2b,A)	$25
OTHER MEDICAL(L2c,A)	$150
TOTAL MEDICAL(L3,A)	$925
ST/LOC. INC. TAX(L6,A)	$3000
REAL ESTATE TAX(L7,A)	$1700
GENERAL SALES(L8,A)	$421
OTHER TAXES(L9,A)	$200
TOTAL TAXES(L10,A)	$5321
MORT INTEREST(L11,A)	$400
FINANCE CHARGES(L12,A)	$2000
TOTAL INTEREST(L14,A)	$2400
CONTRIBUTIONS(L18,A)	$1550
CASUALTY, THEFT(L19,A)	$0
TOTAL MISCELLEN.(L23,A)	$800
ITEMIZED (W/O MED)	$10071

RENT, ROYALTY, ETC INCOME

RENTAL INCOME(L3a,E)	$3120
RENT COMMISSION(L7,E)	$312
RENT INSURANCE(L8,E)	$55
RENT INTEREST(L10,E)	$150
RENT REPAIRS(L12,E)	$300
RENT TAXES(L14,E)	$1500
RENTAL EXPENSE(L18,E)	$2327
RENT DEPRECIAT(L19,E)	$350
RENTAL COSTS(L20,E)	$2677
NET RENT INCOME(L21)	$443

SELF EMPLOYED
SOCIAL SECURITY TAX

SE INCOME(L32,C:L2,SE)	$5000
SE TAX INCOME(L13,SE)	$0
SE SS TAX(L14,SE)	$0

INCOME SPLIT FOR WORK DEDUCTION
AND STATE TAX

LARGER INCOME(L1a,W)	$45000
ADJUSTMENT(L5a,W)	$47721.5
SMALLER INCOME(L1b,W)	$15000
ADJUSTMENT(L5b,W)	$17721.5
DEDUCTION(L8,W)	$1772.15

VA STATE TAX

SMALL INCOME TAX(VA,13)	$869.68
LARGE INCOME TAX(VA,13)	$2347.99
VA TAX(16/17)	$3217.67
VA TAX WITHHELD(VA,15)	$3000
FED+VA PAYMENT SUM + YOU PAY, - YOU GET	$270.41

More Machine Code Bits

SET CURSOR (7 bytes)
This routine is identical to PRINT AT.
cl=column rw=row

```
01 rw cl   LD BC, rw cl
CD F5 08   CALL 08F5
C9         RET
```

PRINT CHARACTER (4 bytes)
This routine prints a character on the screen.
nn=hex code of character

```
3E nn      LD A,nn
D7         RST 10
C9         RET
```

PRINT STRING (10 bytes)
This routine prints a string.
dd=low byte ee=most
addr=hex addr where string starts
length=hex length of string

```
11 dd ee   LD DE,addr
01 dd ee   LD BC,length
CD 6B 0B   CALL 0B6B
C9         RET
```

SLOW (4 bytes)
Same as SLOW

```
CD 2B 0F   CALL 0F2B
C9         RET
```

1040 on the 1000

VU-CALC Edition

by Al Strauss

This VU-CALC program will accept your data and do the necessary computations to figure tax due line 68 or refund due line 65.

First, fill the VU-CALC spreadsheet with zeroes. When VU-CALC is loaded and you are faced with the menu, hit EDIT, STOP, then Enter. Now enter the following lines:

```
9500 FOR I=2 TO 8424 STEP 9
9510 LET B$(I)="0"
9520 NEXT I
9530 STOP
```

Enter FAST mode, and use GOTO 9500. Before you go back to the program, delete these lines. Restart VU-CALC by using GOTO 1, and select C-continue from the menu. [Ed. note - if you have more than 16K RAM you can leave the lines in, but you MUST use E-enter new template.]

If you are on social security you must complete the front of form 1040 to adjusted gross income (Column 05 in VU-CALC) to have the necessary data to enter amounts into column 07. After completing column 07 you enter the amount from line 11 SS into amount for line 21 B 1040. Line 11 amount SSA = Box L07. Line 21B amount 1040 = Box Q02. Then go back to col 03 and calculate formula in box C03. If social security is not needed, go straight to column 09, as SS figures will not affect computation.

Layout of 1040 VU-CALC template

```
COL 01..LINE NOS.,6F AND 7 TO
        23, TOTAL INCOME.
COL 02..AMOUNTS FOR COL 01
COL 03..TOTALS COL 02
COL 04..LINE NOS.24 TO 32
        ADJUSTMENTS TO INCOME
COL 05..AMOUNTS FOR COL 04
COL 06..LINES 1 TO 11 SSA 1099
COL 07..AMOUNTS COL 06
COL 08..LINE NOS 1 TO 19
        SCHEDULE A
COL 09..AMOUNTS COL 08
COL 10..LINES 20 TO 26
COL 11..AMOUNTS COL 10
COL 12..LINES NOS. 33 TO 50
        1040 TAX COMPUTATION
COL 13..AMOUNTS COL 12
COL 14..LINE NOS. 51 TO 68
        1040 TAX COMPUTATION
COL 15..AMOUNT COL 14
```

```
C03  B03+C02 REL TO ROW S
I05  B05+C05+D05+E05+F05+G05+H05
     REL EXIT GET SET BOX 015
J05  S03-I05
C07  B07/2
D07  S03-Q02
F07  C07+D07+E07
     REL EXIT GET SET BOX E11
G07  I05-H05
H07  F07-G07
J07  (I07<H07)*(H07-I07)
K07  J07/2
L07  (K07<C07)*K07+(C07<K07)*C07
F09  B09+C09+D09+E09
REL  EXIT GET SET BOX
     S09,X09,R13
G09  J05*.05
H09  (F09>G09)*(F09-G09)
N09  I09+J09+K09+L09+M09
F11  H09+N09+S09+X09+Y09+E11

H11  (F11>G11)*(F11-G11)
B13  J05
C13  H11
F13  D13+E13
     REL EXIT GET SET BOX
     J13,M13,V13
G13  F13/2
H13  B13-C13
I13  B02*1040
S13  M13-R13
W13  (S13>V13)*(S13-V13)
G15  W13+B15+C15+D15+E15+F15
P15  (015>G15)*(015-G15)
R15  (G15>O15)*(G15-O15)
S15  (O15>G15)*(O15-G15)
```

CRYPTOGRAM Solution:

I'VE HEARD OF HALLEY'S COMET ALL MY LIFE.
IT DIDN'T OCCUR TO ME THAT I WOULD HAVE
TO WATCH IT ON TELEVISION.

MINI XMOD REVIEW

by Mel Richardson

Toronto Timex-Sinclair Users Club

Sinc-Linc, Nov '85

I bought a new terminal program called "MINI XMOD". It promised to up/download Timex programs for 16 or 64K machines, something that MTERM will not do for the TS1000 or ZX81. It is available for Westridge or Byte-Back MODEMs.

XMOD will do this and more. The user can toggle a SAVE function at will and store anything displayed on screen for later viewing or printout. Since the program resides either above ramtop or in low memory with 64K, a Timex/ZX81 program can be downloaded and run or saved to tape or printer. I found that I could download Apple routines and send them to the printer. With 64K, quite a long session can be saved and viewed at leisure offline. E-Mail can be composed and programs prepared for uploading before connecting.

XMOD will not auto-dial or answer as MTERM will but I find XMOD easier to operate in all functions. It is also easily converted to fast load formats. Thirteen 8.5 x 11 inch pages provide thorough documentation.

For those with T/S/ZX modems feeling shortchanged by the software, I highly recommend MINI XMOD.

MINI XMOD for Westridge or Byte-Back MODEMs: (specify make) $20.00 (includes p&h) to Weymil Corporation, PO Box 5904, Bellingham WA 98227-5904

Ed Note: I understand that MINI XMOD is an adaption of XMOD, a public domain CPM modem driver program.

Tales From the Chip..

(or, One Down, One to Go.)

by Mark Fisher

As you may have heard, I zapped my 2068 a month ago. I hope that some readers may find the story of its repair instructive, or at least entertaining.

John Conger was kind enough to loan his machine so that the Feb. newsletter could go out, and in the meantime, I bought a second 2068 to use. Normally, the next step would be sending the offending 2068 back to Timex. Unfortunately, the machine I have been using is a fully socketed prototype, and Timex Little Rock said that there was no way they could repair the same machine and return it. They are no longer repairing damaged 2068's, they said. They have a backlog of rebuilt 2068's which they send out in exchange when a damaged machine is returned for repair.

All right then, plan two: I decided to try fixing my 2068 myself. First, I substituted the easiest chips to find. I had one of Tom Bent's "fixed" exROMs installed in the machine; perhaps that blew. I replaced it with the original exROM; no change. I replaced the Z80; no change. I tried subbing a Spectrum ROM for the home ROM (being careful here; allowing for the fact that my Spectrum "ROM" is actually an EPROM with slightly different pinouts); still no go.

It looked like I was going to have to start buying chips. The LS245 buffer chips often absorb voltage spikes. I picked up two buffer chips (74LS245) from Mark Electronics, and replaced them: no change. The memory chips are a little hard to find (150 ns 4416's). Electronics Plus and Mark Electronics drew a blank. I tried swapping adjacent chips; no change.

In a fit of deduction, I decided that it must be the SCLD. They are unavailable, but there was a known good one in my replacement machine, and John hadn't picked his 2068 up yet. How to get it off? I was afraid of desoldering wick lifting the traces, but I heard of a chemical that would dissolve solder, leaving the circuit board intact. I got some from a friend's employer; it turned out to contain 40% hydrogen peroxide. I wasn't able to use it 'till two days later. When I reached for the vial, it had vanished, leaving only a white crystalline coating on the vial. Hrrumph!

Enough Mr. Nice Guy; I decided to use solder wick and peel the SCLD off. It actually wasn't very hard. I coated the wick with extra flux, and trimmed it as soon as it started to load up with solder. I then used an Exacto knife to separate the leads from the board. The leads curl back under the chip, but the socket on my board makes contact with the sides of the leads, and the few ends I cut off didn't affect the chip. I put the new chip in the SCLD socket: no change. Oh, well. Did I damage the SCLD in removing it? Probably not; the screen pattern was the same with either chip.

In talking with Tom Bent, we realized that there are three other chips that control addressing: the LS244 that hides under the extra board on most machines, and two LS157's. I picked them up from Electronics Plus, and subbed them; no change.

We had also noticed that the memory chips were wired as pairs U6-7, U13-14, U17-18. Further, the pairs are not side-by-side on the board; my chip swapping hadn't really moved anything important before. I tried moving the 17-18 pair to 6-7 and WOW!! I got the Timex logo! No response to the keyboard however. I looked around; my backup 2068 was going to have to wait 'till I could get a socket for the SCLD anyway...

Using a solder sucker, I lifted the excess solder from around the legs of the 4416 RAM chips. The suction doesn't leave the chip leads loose in the board, but it leaves the joints very weak - I then loosened them with the exacto, and levered them out of position on the board. A little careful prying under each chip got them out with only one loss. The "new" 4416's replaced U13-14, and I.T W.O.R.K.E.D.!

Where am I now? My original machine is operating. My backup is down, until I find a supplier for "68 pin leadless chip carriers (surface mount)." They are hard to find; the one I have is made by AMP, but has no part# . There is a manufacturer in Illinois; I'm not sure what their minimum order will be. Haven't found any local sources. I'll also need replacement 4416's, and sockets. If worst comes to worst, I'll return it to Timex to fix.

Moral? These things are fixable. Your machine may not be socketed, but chips can be removed without damage, and sockets are cheap when time comes to plug them back in. Lastly, if you're going to send a machine back to Timex, let me know first; with or without the chips, it'll just be scrapped anyway.

It sure feels good to have my good old sticky keyboard back!

MF

A Mathematical Hint

by Murray & Caroline Barasch

When trying to sum an alternating series (terms successively positive and negative), it would seem natural to use the factor (-1)^n. However, your 2068 will squalk "INVALID ARGUMENT" Naturally, it evaluates B^A as EXP (B*LN (A)), and the logarithm of a negative number is complex, a no-no for any computer not alerted to handle complex numbers. The way out is to use, instead, a factor COS (N*PI).

CRYPTOGRAM:

D'MP APRXY LT ARNNPG'F OLUPZ

RNN UG NDTP. DZ YDYE'Z LOOKX

ZL UP ZARZ D SLKNY ARMP ZL

SRZOA DZ LE ZPNPMDFDLE.

HELP!

How can I get my Memopack HRG to dump to my 2040 printer? If you have had experience with this combination, write Andre Laviolette, 1385 av. Bernard ouest, Suite 16, Montreal QC H2V 1W1 Canada.

I am interested in joining your users group [n/l sent, ed.]. In addition, I am looking for the game program Deus Ex Machina. Suppliers are out of stock, and the publisher is out of business. Can you help me? John Riley, 1316 Farrara Dr., Odenton MD 21113 (301) 674-8560

I have been looking all over for the necessary software to support LPRINT, LLIST, and COPY for my Spectrum ROM and Tasman CPI (type B). I am particularly interested in getting printouts from OMNICALC to my Panasonic 1091 printer. John L. Gordon, R.R. #4 Box 91, Chadds Ford, PA 19317.

UNCLASSIFIED

FOR SALE: ZX81 system - 64K RAM, full size keyboard, etc. Write James Szymkowiatt, 1166 Cedar Ave., Shady Side, MD 20764 for details.

FOR SALE: 2068 system including: 2068; 2020 Recorder; 2040 Printer; 2050 Modem; Comrex CR-5300 amber monitor; many programs including Tasword, Multi-Draw, VU-3D, VUCALC, etc.; several books and the technical manual. $500 for the package. Dennis Martinec, 508 Beechnut, Brandon, SD 57005 605-582-7189

C.A.T.S. 10 March

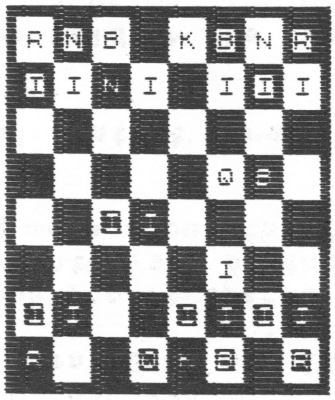
Thanks for your PAID AD!

Mate in Seven!

YOU ARE THE WHITE PIECES PLAYING AGAINST TIMEX CHESS AT LEVEL ONE
YOU CHECKMATE IN SEVEN MOVES

```
    YOU   ZX-81

01 C2-C4  E7-E5
02 B1-C3  D8-H4
03 G1-F3  H4-F4
04 D2-D4  F4-F5
05 C1-G5  E5-E4
06 C3-B5  E4-F3
07 B5-C7
CHECKMATE
YOU WIN
```



Al Stevens

PRODUCT REVIEW

OK Industries Wire Nippers MS-01

Every electronics hobbiest needs nippers. I've seen some amazing things attempted to make do, including ground down fingernail clippers, but nothing works like the real thing. The most common type are not suitabe forour use however; we require a fine tip, to reach in between chip leads.

VACO makes a beautiful pair, but they run around $13.00. The cheapest ones run around $4.50, but they are <u>really</u> cheap. OK industries, however, makes a nipper that fits the bill. It's $5.50, roughly, has contoured handles, is spring loaded, and can nip the finest leads, in the tightest spaces.

There is a variant, for another dollar, that has an extra clip added to retain the nubbin of wire that always heads for your eye after its seperation from the board. Either way, the little green nippers are a good value. Available from Electronics Plus.

Thanks for your PAID AD!

The mailing address of the Capitol Area Timex/Sinclair User's group is:

Capitol Area Timex/Sinclair User's group
P.O. Box 725
Bladensburg, MD 20710

CATS is a non-profit special interest organization dedicated to serving the interests of those who own, use, or are interested in learning more about the Timex/Sinclair family of personal computers.

The official contact person for CATS is JULES GESANG:

301*922-0767

Meetings are held on the second Saturday of each month at 2 P.M. in the large meeting room of the New Carrollton Branch Public Library.

Ham Radio Network Information
QZX Net...Wednesdays, 9p.m. local time; 14.345 MHz NV4F NCS
Eastern Regional Sinclair Net...Sundays, 1600 Z; 7.245 MHz
K0ZF NCS

CATS Newsletter
P.O. Box 725
Bladensburg MD 20710

COME TO OUR MEETING!
The next meeting of C.A.T.S. will be held on:
Saturday, March 15, 1986
11:00 AM - Hardware meeting
2 - 5 PM - General meeting

At: New Carrollton Public Library
7414 Riverdale Road (Hwy 410), New Carrollton, MD

IF YOU ARE NOT A MEMBER OF CATS, THIS IS THE ONLY ISSUE YOU WILL RECIEVE

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First Class